CHAPTER 9

Engineering Management

The engineering management operations at the installations are diverse and complex. Directorate of Public Works (DPW) requires a work force with skills in professional engineering, management, contract administration, and the crafts and trades. The organization must be able to cope with varying requirements. A sound management system is essential for increasing productivity and attaining maximum return for resources expended to accomplish the mission. The management system must provide the engineer with the tools to make efficient and effective decisions. Information is needed to deal with both complex and routine engineering problems, and the ability to expedite simple repairs. The engineering management system will use available automated management information systems to facilitate all requirements. The engineering management system must receive support from the installation commander to be successful. This support may he best demonstrated by requiring work to be accomplished according to planned and approved priorities in accordance with the Real Property Master Plan.

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THE ENGINEERING MANAGEMENT STRUCTURE

The Office of the Assistant Secretary of the Army (Installations, Logistics and Environment) (OASA (I, L&E)) provides the overall policy and program direction for engineering on the Army installation. The facilities and housing directorate, ACSIM, has Army staff responsibility. It provides guidance for the formulation, management, and evaluation of facilities, construction and real property management. The installation management support activity, ACSIM, provides assistance and technical guidance to MACOMs and installations with efforts to create Army communities of excellence for soldiers and their families. The US Army Center for Public Works (USACPW) provides technical support to DPWs at installations and assists the ACSIM and OASA (I, L&E) in implementing DPW policy and programs.

The MACOM commanders provide command supervision of facilities engineering at the installation through their staff engineers, or engineering functions in the Deputy Chief of Staff for base operations support. The MACOM engineer provides oversight, technical guidance, and validation for maintenance and repair (M&R) projects. He also prioritizes M&R projects exceeding the installation commanders approval authority. He also ensures that internal controls are in place and executed as required.

Responsibilities of installation commanders are to-

- Establish and maintain a Real Property Master Plan in accordance with AR 210-20.
- Establish an efficient and effective facilities engineering organization in accordance with ARs 5-3 and 420-10.
- Approve the resource management plan to include the annual work plan and programs for facilities engineering ensuring all investments are in accordance with the installation Real Property Master Plan.
- Establish procedures to identify and manage facilities in accordance with AR 420-16 to include maintaining an accurate Real Property inventory and management system.
- Apply internal control review procedures and identify deficiencies to the MACOM for assistance and resolution.
- Approve procedures for the DPW to request assistance from the Corps of Engineers direct support district or division or US Army Center for Public Works. Also request assistance from the

US Army Environmental Center for work which cannot be accomplished with existing DPW resources and capabilities.

- Assure that a Fire Emergency Services plan is operating throughout the installation. This includes all aspects of firefighting, including 1st Responder Hazardous Materials (HAZMAT) and Emergency Medical Services, fire prevention, and active and passive measures in facilities design. This is normally performed by the DPW.

OUTYEAR MANAGEMENT SYSTEMS

To provide the facilities and services required to meet the needs of the units, soldiers, workers, and families, the installation must find more efficient ways of doing business. The following paragraphs will discuss some of the management policies, practices, and changes that will affect engineering management at the installation.

AUTOMATED ENGINEERING MANAGEMENT SYSTEMS

The Integrated Facilities System-Mini/Micro (IFS-M) is the system of record for management of real property assets. All new facilities engineer automation requirements and all non-DPW related interface must be compatible with IFS-M at the data element level. Any new system should be coordinated through USACPW.

INTEGRATED FACILITIES SYSTEM-MINI/MACRO (IFS-M)

IFS-M is the newest generation of automated systems to support the DPW Real Property Maintenance Activity (RPMA). It also supports the Army family housing missions that pertain to work order management. Its main advantages are interactive processing with anon-line update, query capability, and report flexibility. IFS-M provides information on most of the DPW activities. IFS-M also is the single-source database for facility-related and budget-supportive information.

DESKTOP RESOURCE FOR REAL PROPERTY (DR-REAL)

DR-REAL is a personal computer based software package. It automates the task of real property inventory management for installations that are not scheduled to receive IFS-M. It also is specifically designed to aid installations in updating, reporting, and querying their real property databases. DR-REAL helps prepare the Army military real property inventory and the building information schedule reports. It is a counterpart to the real property module of IFS-M, providing similar reports. DR-REAL has been fielded to support active Army, RC, and NG installations. It also is being fielded to support the Corps of Engineers.

KEY POLICIES

The following paragraphs describe key policies that establish installation engineering management direction.

RESOURCE MANAGEMENT PLAN (RMP)

The RMP provides the DPW manager with a critical tool for planning the effective accomplishment of the DPW mission. It serves as the hub plan around which all DPW short-and long-range plans are coordinated and developed. The RMP is a consolidation of all DPW developed plans into a single integrated plan. This plan reflects all major requirements, initiatives, actions, and objectives up to six years into the future. In addition, the plan contains supplementary management information pertinent to the DPW operation. When properly developed, the RMP serves as the basis for unconstrained requirements report and command budget estimate preparation. In short, the RMP depicts an installation's complete DPW program and the strategy to accomplish it. The plan is flexible in format, content, and amount of detail. The content of RMP consists of four major sections:

- Long-range goals and objectives.
- DPW programs.
- Annual work plan.
- Management information.

The first three sections closely parallel the planning and programming processes as reflected in the PPBES. The fourth consolidates basic information essential to day-to-day management.

ANNUAL WORK PLAN (AWP)

The AWP is vital to the efficient and effective accomplishment of the engineering mission. The AWP is a component of the RMP. It provides all major requirements for accomplishment in the upcoming fiscal year. Feeder reports into the plan include the installation hazard abatement plan. The plan should describe and estimate the cost of as many significant projects, tasks, expenditures, initiatives, and capabilities as possible. For the recurring and predictable costs, such as utilities and summer overhauls, reasonable estimates can be included in the AWP for the entire year. Other requirements, such as minor construction and travel, are less predictable, and the level of detail in the AWP will be less for the later quarters of the fiscal year. Preparation of the workload portion of the AWP usually begins in the second quarter of the fiscal year preceding the plan year in order to coincide with development of the Command Budget Estimate (CBE).

ENVIRONMENTAL STRATEGY FOR THE ENGINEER

Installation responsibility for overall direction of the environmental and natural resources management program may be integrated with the DPW. It also may be organized as a special staff under the installation commander. The DPW remains responsible for incorporating environmental considerations into all aspects of facility and housing management. Such considerations include-

- Impacts of repair, maintenance and construction.
- Energy and water consumption.
- Wetlands.
- Noise.
- Ground cover and soil stability.
- Wildlife.
- Storm water runoff.
- Cultural resources.
- Water demand and supply.
- Hazardous waste management.

The DPW must integrate and incorporate these considerations early in the planning process and throughout the implementation process. These actions are imperative to achieving environmental stewardship. The US Army Center for Public Works provides an automated tool for installations to conduct water supply and management. This system is named the Installation Water Resource Analysis and Planning System.

In foreign nations, political implications have much more direct impact on defense readiness and construction programs than in CONUS. The similarity between commercial manufacturing challenges in the areas of air, water, and waste pollution and those faced by the Army is apparent. Additional issues involve noise, cultural resource preservation, endangered species, and other nonpollution subjects. The size of most military reservations cause environmental problems to become major and costly considerations. Activities involving environmental considerations include helicopter flight routes, isolated maneuver areas, and weapons range firing. Less obvious areas of concern are the environmental impacts of proposed base closures or of new land acquisition.

The DPW reviews and approves staff consideration of the environmental consequences of proposed programs. He coordinates preparation of the formal environmental documentation. He subsequently supervises the installation progress toward operations to accomplish missions without damaging the environment. Each staff element or unit has the responsibility to assess the environmental consequences of its operations. Hazardous waste management plans for the installation are a significant DPW responsibility, especially where industrial operations are performed, typically in AMC. This may be a major customer-requested DPW workload that involves many other organizations on the installation. A key facet of environment programs is maintenance of ranges under intense training demands using state-of-the-art natural resource technology to ensure training realism and safety.

RESOURCE MANAGEMENT ESSENTIALS

Financial management is the set of actions needed to identify, obtain, manage, and account for funds required to accomplish mission objectives. Out-year planning usually needs more emphasis to enable DPW to compete for diminishing fund sources. Financial management data are important aids to managers for planning, for directing day-to-day operations, for identifying deviations from plans, and for developing optimum solutions. The DPW financial accounting and reporting system should meet the following financial management needs:

- Adequate financial data for effective management.

- Effective control and accountability of all funds, property, and other assets for which the DPW is responsible.
- Reliable information to serve as the basis of submissions supporting the DOD's Planning, Programming and Budget System (PPBS) and the Army's PPBES.
- Full disclosure of the financial results of DPW activities.

The current financial system supporting the DPW is the Standard Finance System (STANFINS). Until the system is updated by the Defense Finance and Accounting Service, the DPW will be increasingly dependent upon IFS-M data to assist in resource management.

The DPW RPMA budget consumes over 50 percent of an average installation's base operating budget. It is vital that the DPW stay involved in the financial management of the DPW organization and the installation. Financial management is one of the most effective ways to keep track of an organization's "health." It also can detect early warnings of potential problems.

PROJECT APPROVAL AND WORK LIMITATIONS

A minor construction project includes all work necessary to produce a complete and usable facility or a complete and usable improvement to an existing facility. Construction projects with a funded cost of $300,000 or less shall normally be financed from other than MCA appropriation. These are Army O&M, or RPM,D (RPM,D funds are available only until 30 September 1994 unless otherwise extended by Congress).

An installation commander has approval authority to use the Real Property Maintenance, Defense Account as a source of funding for minor construction or repairs costing between $15,000 and $300,000. All delegations and redelegations of approval must be in writing. The approval authority for maintenance and repair projects is outlined in AR 420-10.

The following constitute a statutory violation:

- Planned acquisition or improvement of real property facilities through a series of minor construction projects.
- Subdivision of a construction project to reduce costs to a level that meets a statutory limitation or the splitting or incrementing of costs of a project to reduce costs below an approval threshold.
- Development of a minor construction project solely to reduce the cost of a military construction project below the level at which Congress would be informed of the cost variation.
- The misclassification of minor construction work between construction, maintenance, and repair.

REAL PROPERTY MANAGEMENT AND PLANNING

The real property master plan (RPMP) is the installation commander's instrument for unifying planning and programming for installation real property management and development. It is based on assigned installation missions and guidance contained in a variety of plans and other documents. These plans and documents govern the RPMP. They include the Army long-range planning guidance, the Army long-range facilities plan, the Army plan the POM, PBG, the Army stationing and installation plan, and Army force structure documents. Real property master planning is an interactive process. This includes integrating the planning guidance and other plans, recording the planning process, and providing the framework for decision making.

The RPMP consists of four components-

- Long-range component (LRC).
- Capital investment strategy (CIS).
- Short-range component (SRC).
- Mobilization component (MC).

The RPMP lays out the management and development of the installation as it transitions from its existing conditions, through the short term, to support long-range peacetime and mobilization missions. The LRC establishes the basic framework and specific operations by documenting the installation capabilities, constraints, and opportunities. It describes the environmental baseline showing significant environment or installation development. An element of the LRC is the installation design guide. It provides specific guidance on the exterior and interior design parameters toward achieving aesthetically pleasing working and living environments. The CIS establishes how unrestrained facilities requirements and planning goals will be met over time within realistic resource constraints. It is a bridge between long-range and short-range planning, connects with programming, and maps a strategy of revitalizing and developing real property and infrastructure. It plans interim actions to meet requirements on a short-term basis. It also provides a means of assuring that real property resources are being applied in the best way to meet mission objectives. The

SRC integrates real property master planning into the six-year POM. This identifies and justifies specific real property projects, integrating all projects regardless of fund source and reflecting real property planning and management. The mobilization component provides a systematic time-phased evaluation of an installation's ability to meet mobilization requirements through facilities, utilities, housing, and engineering services. It develops the expansion capability analyses for the LRC into specific plans to allocate existing facilities and acquires needed additional facilities to support mobilization missions, functions, and tasks.

Real Property Planning Board (RPPB) supports the installation commander in his responsibility to manage and develop the installation. The RPPB guide-

- Develops and maintains all components of the RPMFP.
- Coordinates with nearby installations, DOD and federal agencies, and local governments.
- Ensures that the RPMP address all real property requirements for missions and community needs.
- Determines architectural and design themes.
- Ensures that plans are in harmony to protect and enhance the environment.
- Formulates construction and major repair program.
- Oversees space utilization management.

The installation commander should ensure that a copy of the Real Property Master Plan is provided to the Directorate of Contracting and considered in advance acquisition planning.